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NEW AND LITTLE KNOWN SPECIES OF THE LEPTOCERINAE (TRICHOPTERA) FROM THE AFRICAN MAINLAND (SOUTH OF THE MEDITERRANEAN REGION).

By D. E. Kimmins

(*Dept. of Entomology, British Museum (Natural History)*.)

Manuscript received 8th February, 1955.

(Read 2nd November, 1955.)

With 18 Text-Figures

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1. Introduction

The original basis of this paper was the collection of Trichoptera made by Dr. Norman E. Hickin during a six weeks' visit in May and June, 1954, to the laboratories of the East African Fisheries Research Organisation at Jinja, Uganda, on the northern shore of Lake Victoria. During the working-out of his material, the scope of the paper was enlarged by the arrival of several consignments containing Trichoptera from the same area, collected and sent by Dr. Philip S. Corbet, of the East African Fisheries Research Organisation (hereafter to be referred to by its initials E.A.F.R.O.). Both these collections were largely made at light, Dr. Hickin's being preserved dry and Dr. Corbet's in alcohol. The collections were thus to some extent complementary and enabled me to give a better account of the appearance of the dry insect, especially in cases where the vestiture of the wings is easily detached by friction in fluid.

Dr. Hickin's interest lay primarily in the breeding-out and description of the larvae, whereas Dr. Corbet's main object has been to build up a named collection of the Trichopterous fauna of the district to assist in future ecological work.

The Leptocerinae appear to be the best represented group in numbers of species and it has been decided not to wait until all the families have been worked out, but to make a start by publication of the Leptocerinae. In addition to the two main collections already mentioned, advantage has been taken of this opportunity to include descriptions of a few new species from other parts of the continent and to deal with some synonymy.

A new key to the Leptocerine genera recorded from Africa (excluding the Mediterranean Region) has been prepared and a list of the species involved

is given at the end of this paper. The author is very grateful to Drs. Hickin and Corbet for the opportunity of studying this material and would like to express his appreciation of their kindness in presenting the types of all new species and much other material to the British Museum (Nat. Hist.). Named duplicates of Dr. Corbet's material have been returned to the laboratories of the E.A.F.R.O., Jinja.

All genitalia figures have been made with the aid of a camera lucida, after treatment of the material with caustic potash solution, and have been drawn whilst in either glycerine or clove oil before permanent mounting.

2. Key to the Genera of the Leptocerinae Recorded from the African Mainland (excluding the Mediterranean Region).

1. Rs in hind wing present, not obsolescent basally 5
– Rs in hind wing absent or incomplete basally 2
2. M in hind wing also obsolete basally, very weak apically . . . . **Leptocella** (Note 1)
– M in hind wing normally formed 3
3. Hind wing moderately broad (about two and a half to three times as long as broad), posterior margin moderately convex. . . . **Hemileptocerus**
– Hind wing narrow (about four to five times as long as broad), posterior margin only slightly convex 4
4. Basal segment of antenna (in both sexes) rather stout at base, tapering to apex, and without a tuft of long hairs at apex in male . . **Setodes**
– Basal segment of antenna (in both sexes) slender, cylindrical, in male with a tuft of long hairs arising from a small callosity at apex. (These hairs are easily denuded, especially in fluid-preserved specimens) **Trichosetodes**
5. Hind wing with M simple, unforked 6
– Hind wing with M forked 7
6. Fore wing with M_{3+4} apparently arising from the *m-cu* cross-vein; hind wing with only apical fork no. 5 . . . . . **Ptochoecetis**
– Fore wing with M_{3+4} clearly arising from M, beyond the anastomosis; hind wing with apical forks nos. 1 and 5 . . . . . **Parasetodes**
7. Fore wing with thyridial cell absent, stem of M apparently absent **Triaenodes**
– Fore wing with thyridial cell present, stem of M present and normal . 8
8. In fore wing, M_{3+4} apparently arises either from the *m-cu* cross-vein or from Cu_{1a} 9
– In fore wing, M_{3+4} clearly arises from M 10
9. Male cerci fused with tenth tergite to form a hood-like plate; apical fork no. 1 in hind wing present or absent . . . . . **Setodellina**
– Male cerci digitate, not fused with tenth segment as above; apical fork no. 1 in hind wing present . . . . . **Oecetis**
10. In fore wing, M_{3+4} arises from M at or before the anastomosis . . . 11
— In fore wing, M_{3+4} arises from M beyond the anastomosis 13
11. Hind wing with apical forks nos. 1 and 5 12
— Hind wing with only apical fork no. 1 . . . . . **Adicella**
12. Spurs 0.2.2 . . . . . **Leptocerus**
— Spurs 2.2.2 . . . . . **Leptocerina**
13. Hind wing with apical forks nos. 1 and 5 14
— Hind wing with apical fork no. 5 only 16

14. Fore wing densely scaly over greater part; hind wing with area between R_1 and Rs very wide, Rs curved, forking beyond *r-m* cross-vein . . . . . **Pseudoleptocerus**
— Fore wing not densely scaly, or with scales restricted to small areas only; hind wing with area between R_1 and Rs not very wide, Rs nearly straight, forking before *r-m* cross-vein 15
15. Fore wing with apical forks nos. 1 and 5 only in both sexes . . **Homilia**
— Fore wing with apical forks nos. 1 and 5 in male, 1, 3 and 5 in female **Athripsodes**
16. Fore wing with apical forks nos. 1, 5 in male, 1, 3, 5 in female **Athripsodes (Leptocerodes)** (Note 2)
— Fore wing with apical forks nos. 1 and 5 in both sexes . . . . **Leptecho**

Note 1.—The genus *Leptocella* is included, with some doubt, in this key as an African genus on the evidence of two examples in the unidentified accessions of McLachlan's Collection. They are labelled " Gold Coast, West Africa " and it is possible that the locality may be incorrect, although, if it does occur in Africa, it would be on the West Coast that one might expect to find it. The genus is mainly North and South American in distribution, although a few species have been recorded from the Oriental region. The specimens from McLachlan's Collection are somewhat abraded and mouldy, and while I have no doubt as to their generic identification, it is not proposed to give them a specific name at present.

Note 2.—The name *Leptocerodes* Lestage has been placed in the synonymy of *Athripsodes*, since the chief character upon which it is based, the absence of apical fork no. 1 in the hind wing, has been shown by Barnard to be an unstable one in the genus *Athripsodes*.

3. Descriptions of Species.

Pseudoleptocerus Ulmer.

1907, *Genera Insect.* 60a : 136, pl. 18, figs. 168–9.

Type-species (monobasic), *Leptocerus squamosus* Ulmer, 1905.

The preparation of the foregoing key to the African genera of the Leptocerinae led me to study the characters upon which this genus has been separated from *Athripsodes* (*Leptocerus* auct.). The main character employed by both Lestage (1919) and Barnard (1934), the presence of dense masses of scales on the fore wing, is the most obvious one but it is not entirely satisfactory since inefficient methods of collecting and preserving these insects may result in the almost total removal of the wing-scales, which are easily detached by handling or by careless packing in alcohol. The tibial spur formula (2.2.2) is common to both genera, although Lestage gives 1.2.2 for *Pseudoleptocerus* (possibly a misprint). The apical forks of the fore wing are similar in both genera, the females of both having an additional apical cell. The remaining character used by these two authors, the relative width of the radial area of the hind wing, seemed promising, and I then studied the venational characters given by Ulmer when defining the genus.

In the fore wing, neither the shape of the discoidal cell nor the length of this cell relative to its footstalk seemed to be sufficiently constant to be used

as generic characters. In *Athripsodes* the discoidal cell is generally clearly longer than its footstalk, but there is some intergrading towards the shorter discoidal cell normally occurring in *Pseudoleptocerus*. The only two venational characters which I consider sufficiently constant are the relative width of the radial area in the hind wing (already mentioned) and the position of the *r-m* cross-vein in the same wing. In typical *Pseudoleptocerus* the radial sector is definitely bent away from the costal margin, causing the area between R_1 and Rs to be wide, with R_{2+3} separating from R_{4+5} beyond the *r-m* cross-vein. In *Athripsodes* the radial sector is at most only slightly concave, the area between R_1 and Rs much narrower and R_{2+3} separates from R_{4+5} before the *r-m* cross-vein.

Pseudoleptocerus minor Mosely is the only exception that I know, and since there is also no strong ventral process to the apical margin of the ninth segment, it seems advisable to transfer this species to the genus *Athripsodes*. Unfortunately Mosely had already used the name *minor* in the genus *Leptocerus* (now *Athripsodes*) in 1930. I therefore propose that his species *Pseudoleptocerus minor* (1933) be renamed *Athripsodes minimus* **nom. nov.**

Pseudoleptocerus schoutedeni Navás.

Uganda: Jinja, 5.v.1954, 1 ♂ (*N. E. Hickin*); 5.iii., 1 ♂, ix-x. 1954, 9 ♂, 32 ♀ (*P. S. Corbet*).

Previously recorded distribution.—Belgian Congo (Albertville, L. Tanganyika and Bugarama, Ruanda), Uganda (Jinja) and Sudan (Zeidab and Shendi).

Pseudoleptocerus chirindensis sp. n. (Fig. 1.)

Portuguese East Africa: Chirinda, Busi River, 8 ♂, 3 ♀ (*E. Pinhey*).

Body piceous. Head with snow-white hairs on face, piceous hairs on occiput. Antenna piceous, basal segments finely annulated with white basally. Palpi piceous, maxillary with long white hairs. Thorax black, legs black, tarsi annulated with whitish, posterior femora with white hairs. Abdomen dark greenish.

Fore wing clothed with scales on its upper surface, general colour piceous or dark brown. There are a number of hyaline areas, as indicated in fig. 1, mainly situated along the costal edge. The area at the pterostigma has its sub-costal and radial spaces clothed with white scales. In addition to these hyaline areas, there are about three groups of spots and streaks arranged transversely across the wing, composed of translucent, iridescent scales, pale aquamarine in colour. One group is located about one-quarter of the wing-length from the base, one just basad of the anastomosis and the third just behind the apical hyaline spots. The apical area of the wing is clothed with iridescent, pale sky-blue scales, shading gradually into the dark brown ground-colour of the wing. There are also sparse, larger, pearly white scales distributed along the main veins. In all the examples I have seen, the basal area of the fore wing is bare, possibly accidentally denuded. Hind wing smoky-brown, with brownish pubescence; there is a hyaline area at the pterostigma. Wing-pattern, shape and venation resembling *Pseudoleptocerus njalaensis* Mosely.

Male genitalia resembling *Ps. njalaensis*, but in the ninth tergite the median dorsal excision is deeper and narrower, the processes more slender in side view. Tenth segment (intermediate appendages + upper penis-cover, Mosely) rather more pointed from above, median part from the side forming a slender, upcurved finger (not clavate as in *njalaensis*). Aedeagus with a trough-like basal sheath, enclosing a slender penis with a semi-membranous

apex, and two pairs of curved spines. Clasper more slender, inner margin from behind more sinuous, apex out-turned.

Length of fore wing, 7 mm.

♂ Holotype (mounted in canada balsam as microscope preparations), in Brit. Mus. (Nat. Hist.), ♂ and ♀ paratypes in Coryndon Museum, Nairobi and Brit. Mus. (Nat. Hist.).

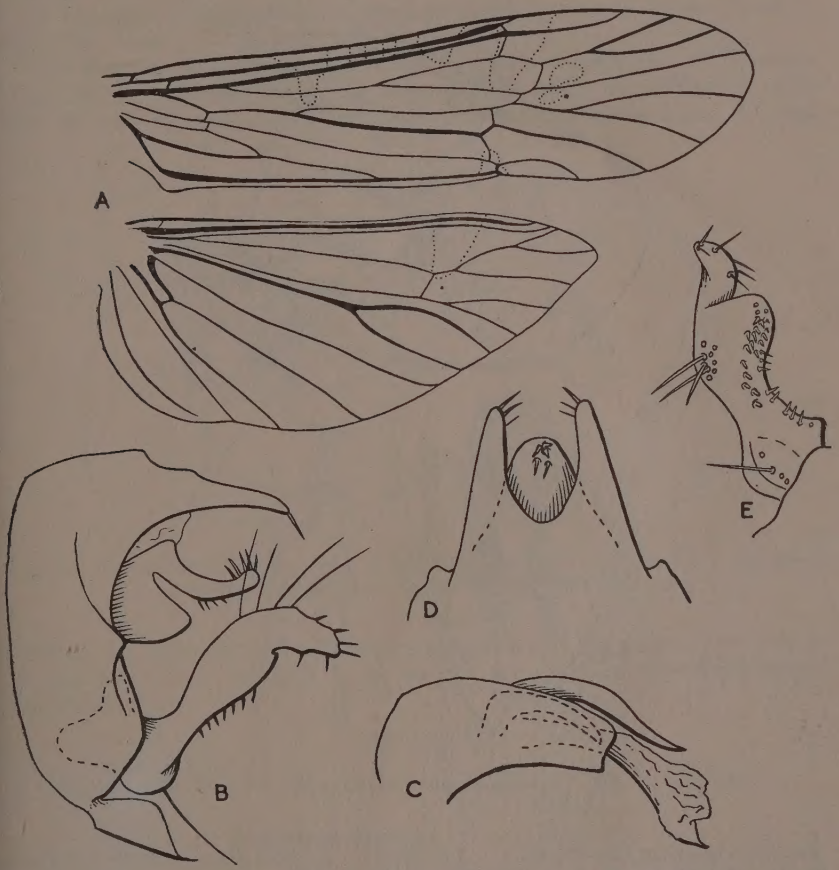

FIG. 1.—*Pseudoleptocerus chirindensis* sp. n. ♂. A, Wings, showing hyaline areas (outlined in dots); B, genitalia, from side, aedeagus not shown; C, aedeagus, from side; D, ninth and tenth segments, from above; E, left clasper from behind.

In genital structure this species is perhaps even closer to *P. schoutedeni* Navás than to *njalaensis* Mosely, but it may be readily distinguished by the much darker fore wing, the light chocolate and yellow scales of *schoutedeni* being replaced by dark brown.

Triaenodes falculata sp. n. (Fig. 2.)

S. Africa: [King William's Town], Annshaw, 1 ♂ (ex. McLachlan Collection).

Male (pinned): General colour of head and thorax ochraceous, with ochraceous hairs. Eyes black. Antenna faintly annulated with dark brown. Abdomen pale greenish, genitalia ochraceous. Fore wing hyaline, with ochraceous pubescence and, in the apical

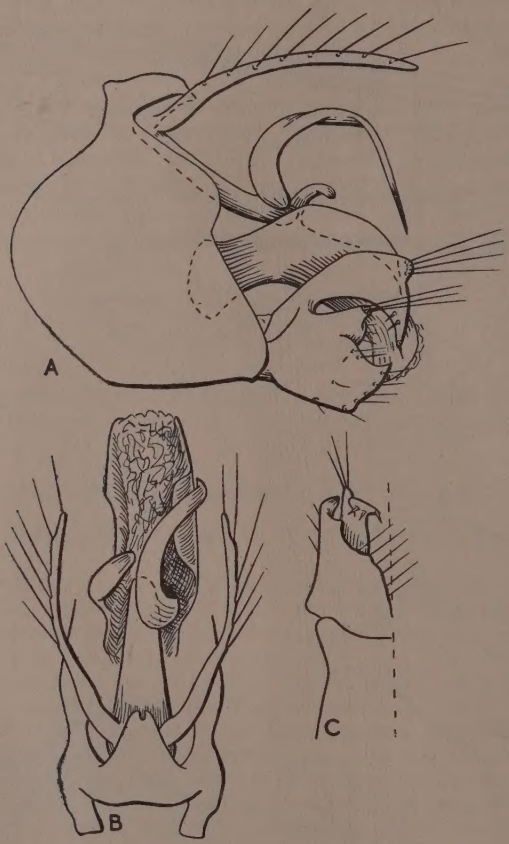

Fig. 2.—*Triaenodes falculata* sp. n. ♂ Genitalia. A, from side; B, ninth and tenth segments and aedeagus, from above; C, left clasper from beneath.

part of the wing, some spots of brownish pubescence. There is also a brownish patch at the arculus and an oblique streak about half-way along the posterior margin. Hind wing hyaline, with scanty ochraceous pubescence.

Male genitalia: Ninth segment narrowed above, triangularly produced at the centre of its apical margin, the apex bearing two minute projections. Cerci long, slender, slightly incurved and fringed with long setae. Tenth segment produced in a long, narrow, triangular lobe with a rounded apex. In the type, the left side only of the apex bears a

somewhat sickle-like spine, stout at its base and tapering to an acute apex. There is no evident indication of the attachment of a similar spine on the other side of the apex. Aedeagus stout, curved downwards, its upper surface channelled longitudinally to form a trough with asymmetric margins. The right-hand side bears a stout incurved hook and the left is inturned to form a flange. The clasper is short, stout, somewhat quadrate from the side, its upper margin elevated to form an irregular hump, upper apical angle pointed. At the base of the clasper arises an inner branch, narrow at its base, directed tailward, dilating to an obliquely truncate apex, whose lower angle is acutely produced.

Length of fore wing, 8·5 mm.

♂ Holotype (pinned, with abdomen mounted in canada balsam) in Brit. Mus. (Nat. Hist.).

The structure of the male genitalia of this species recalls that of *T. serrata* Ulmer (Sudan), but differs in its more slender cerci, the undivided tenth segment with apparently only one sickle-shaped spine at its apex, although

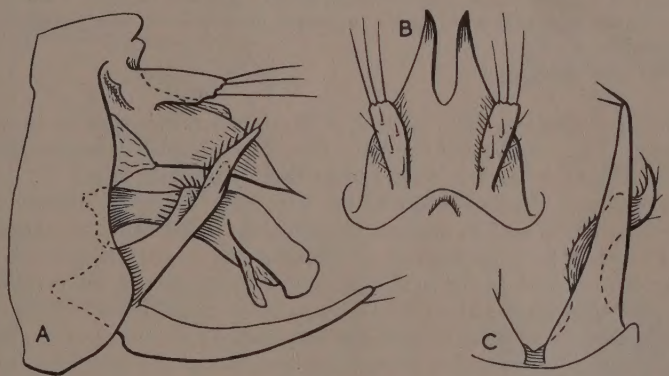

FIG. 3.—*Parasetodes nebulosa* sp. n. ♂ Genitalia. A, from side; B, ninth and tenth segments, from above; C, right clasper from below.

this may be an abnormality. There is no mention of the stout incurved hook on one side of the aedeagus in *serrata* and the shape of the clasper differs considerably.

Triaenodes sp.

UGANDA: L. Victoria, Kagera Bay, 12.v.1954, 2 ♀ (*N. E. Hickin.*)

Parasetodes nebulosa sp. n. (Fig. 3.)

UGANDA: L. Victoria, Kagera Bay, 12.v.1954, 1 ♂ (*N. E. Hickin*); Jinja, vi.1954, 1 ♂, 2 ♀ (*P. S. Corbet.*)

Head fulvous, a raised triangle on the vertex with its apex towards the front. Between the eye and this triangle, on each side are two transverse fuscous bands. Antenna (incomplete) with basal segment large, pale fuscous above, fulvous below, remaining segments fulvous, each with a fuscous annulation about midway, becoming progressively smaller. Maxillary palp with fuscous hairs, except at the apices of segments, where they are whitish. Labial palp with two basal segments luteous, terminal fuscous. Mesothorax fuscous

above, pale fulvous beneath, metathorax and abdomen pale fulvous. Legs luteous, anterior tibiae and tarsi streaked externally with dark fuscous. Fore wing densely clothed with ochraceous pubescence. There are a number of spots of dark fuscous pubescence, near the base of the wing, at the bases of the discoidal and thyridial cells, near the apex of Sc, about the anastomosis and around the apical margin. In the apical half of the wing there are two oblong patches of pale fuscous, one covering the apical half of the discoidal cell and the cell behind it, the other covering much of apical cellules 2 and 3. Other, less definite, pale fuscous clouds are to be seen behind the base of the discoidal cell, in the anal area, near the arculus and in apical fork no. 5. Hind wing hyaline, with sparse whitish pubescence.

Male genitalia conforming to the generic pattern. Ninth tergite triangularly produced. Tenth segment forming a hood, tapering to a bifid apex, which in side view is very acute. Arising from the tenth segment are two short, truncate cerci. Aedeagus cylindrical, slightly dilated apically, blunt and with a lower membranous lobe in side view, pointed in dorsal view. The two branches of the clasper in side view diverge at about 45°. The upper branch is curved outward, constricted on its inner side near the apex, which is hooked tailward. Lower branch slender, slightly upcurved, from beneath nearly straight, tapering and divergent.

Length of fore wing, 11 mm.

♂ Holotype (Kagera Bay, pinned, with abdomen mounted as microscope preparation in canada balsam) in Brit. Mus. (Nat. Hist.), paratypes (in fluid) in the E.A.F.R.O. collection, Jinja and in Brit. Mus. (Nat. Hist.)

This species is closely related to the two other described African species, *P. sudanensis* Ulmer and *P. maguira* (Mosely), the latter being here transferred from its original genus *Leptocerus*, in which it was clearly misplaced, having regard to the venation of the hind wing and the structure of the genitalia. It may be distinguished from both by the form of the upper branch of the clasper, which in *sudanensis* is stouter, suddenly constricted near the apex in side view. In *maguira* the upper branch is dilated and truncate at the apex in dorsal view, and in side view expanded on its ventral surface.

Athripsodes fissus (Ulmer). (Fig. 4.)

Leptocerus fissus Ulmer, 1912, *Dtsch. Zentr.-Afrika Exped.* 1907–08, **4** (Zool. 2) : 108–9, figs. 36–7 (Tanganyika) ; Lestage, 1919, *Rev. Zool. Bot. Afr.* **6** : 314.
Leptocerus ituriensis Navás, 1930, *Rev. Zool. Bot. Afr.* **19** : 333 (Belg. Congo) (**Syn. nov.**).
Leptocerus fissus Barnard, 1934, *Trans. R. Soc. S. Afr.* **21** : 337, fig. 23 (S.W. Africa).
Homilia (?) *fissus* Barnard, 1940, *Ann. S. Afr. Mus.* **32** : 649.
Leptocerus fissus Mosely, 1948, *Ann. Mag. nat. Hist.* (12) **1** : 31 (Lake Nyasa).
Leptocerus ituriensis Schmid, 1949, *Eos, Madr.* **25** : 366, fig. 115.
Athripsodes fissus Kimmins, 1953, *Entomologist* **86** : 275 (Lake Albert).

Uganda : Butiaba, at light, iii.1954, 1 ♂, 1 ♀; L. Albert, Buhuka, at light, 21.iii.1954, 1 ♂, 1 ♀; L. Albert, beach near Buhuka Lake, 23.iii.1954, 6 ♂, 1 ♀; Jinja, at light, ix–x.1954, 3 ♂, 23 ♀ (all *P. S. Corbet*).

I was at first inclined to consider these examples as representing one or possibly two subspecies, but examination of material from other localities raised doubts whether they might not all belong to one widely spread, variable species. Dr. G. Ulmer informs me that the type of his species (*fissus*) is in Berlin and is no longer accessible to him, but with his customary kindness he has examined tracings of genitalia of the various forms and he considers that they could all be included in his species, the differences being no more than varietal. I am

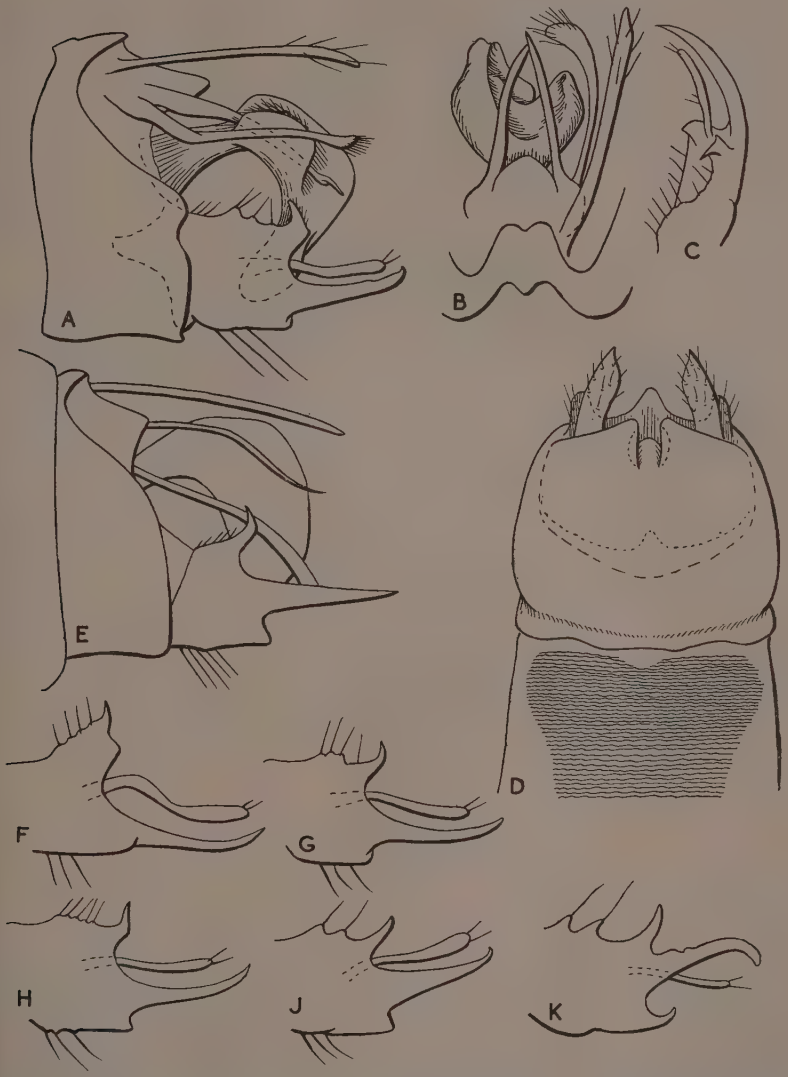

FIG. 4.—*Athripsodes fissus* (Ulmer) and *A. elephas* (Barnard). A, ♂ genitalia, lateral (Lake Victoria); B, ♂ ninth, tenth segments and aedeagus, dorsal; C, left clasper, dorsal; D, ♀ genitalia, ventral; E, genitalia of type (Tanganyika), lateral, after Ulmer; F, clasper, lateral, of *A. elephas* (Barnard), paratype, (Cape Province); G, clasper, lateral, of *A. fissus* (L. Albert); H, the same, (Ituri); J, the same, (L. Nyasa); K, the same, (S.W. Africa), after Barnard.

therefore figuring not only the genitalia of an example from Jinja, which Dr. Ulmer considered most widely divergent from the typical *fissus*, but have included an outline copy of his original figure (reversed for easy comparison) and figures of the claspers of examples from various localities, which will give some idea of the amount of variation.

The example from Ituri, Mahagi (Belgian Congo, near L. Albert) is one of a pair from the type locality of *Leptocerus ituriensis* Navás and, after comparing the female with the figure of the genitalia of the female type given by Schmid, I think that *ituriensis* should be placed in the synonymy of *A. fissus* (Ulmer). Barnard's *Homilia elephas* must also be considered as a possible synonym. It was placed in the genus *Homilia* on the grounds that the venation of the fore wing was alike in both sexes, and on the similarity of the male genitalia to those of the European species *Homilia leucophaea* (Rambur). Bearing in mind also the extraordinary resemblance in male genitalia of *fissus* and *elephas* (the former having typical *Athripsodes* venation in the female fore wing), it seemed most unlikely that they should belong to two different genera. An examination of four females of *elephas* (all determined by Barnard and including paratypes) revealed that two examples each had one fore wing in which there was a narrow, closed, loop-cell on the vein which in *Athripsodes* would carry the additional fork. In *Homilia leucophaea*, the apical margin of the ninth sternite of the female does not show the parallel-sided median excision present in *A. fissus* and in *elephas*, but is merely shallowly excised with the lip of the internal structure projecting beyond it. These facts suggest that in *elephas* the venation of the female fore wing is aberrant and that the species should be transferred to *Athripsodes*. Dr. Ulmer is of the opinion that *elephas* should also be placed in the synonymy of *fissus*. Barnard's *elephas* is from the Cape Province, and since so many of the Cape forms have proved to be distinct from those of the rest of Africa, I prefer to leave *elephas* as a doubtfully distinct species, until examination of more abundant material from various localities shows whether these local variations are constant.

Athripsodes hickini sp. n. (Fig. 5.)

Uganda: L. Victoria, Kagera Bay, 12.v.1954, 7 ♂, 5 ♀; 18.v.1954, 1 ♀ (*N. E. Hickin*).

Male: Head piceous, vertex clothed with snow-white hairs in the centre, bordered with fuscous hairs; frons and palpi with fuscous hairs. Antennae fuscous, marked with snow-white hairs towards the base on upper surface. Thorax piceous, with a median, longitudinal band of snow-white hairs. Legs fuscous, spurs 2.2.2, median femur with white pubescence on upper surface towards apex, median tarsus with whitish pubescence beneath. Abdomen fuscous.

Fore wing dark brown, clothed with reddish-brown pubescence and boldly marked with areas of snow-white pubescence as follows:

A long, narrow band running obliquely from the posterior margin at about one-fourth from base forward and apically across and beyond the base of the thyridial cell; a small spot on posterior margin at the arculus; a short, curved band running forward and apically from the base of apical fork no. 1 to the anterior margin, and finally the marginal fringe along the apices of the third and fourth apical cellules. Hind wing pale fuscous hyaline. Shape of wings and venation as in *A. malia* (Mosely).

Male genitalia : Dorsal margin of ninth segment produced in two short, divergent processes, tapering from wide bases to narrow apices, each armed with an apical seta. Cerci short, broad, from above bluntly clavate. Tenth segment forming a thin, arched plate, its apex produced in two short, pointed processes, with an acute excision between them. From near the base on each side arises a slender, down-curved, spinelike process. Aedeagus with a slender stem, apex dilated and membranous, with a ridge or flange on each side. Claspers stout, each with a slender, incurving finger arising from the upper margin about midway, about as long as the main part of the clasper. Beneath this process, the apex of the clasper is incurved, acute in side view and forming a small claw in ventral

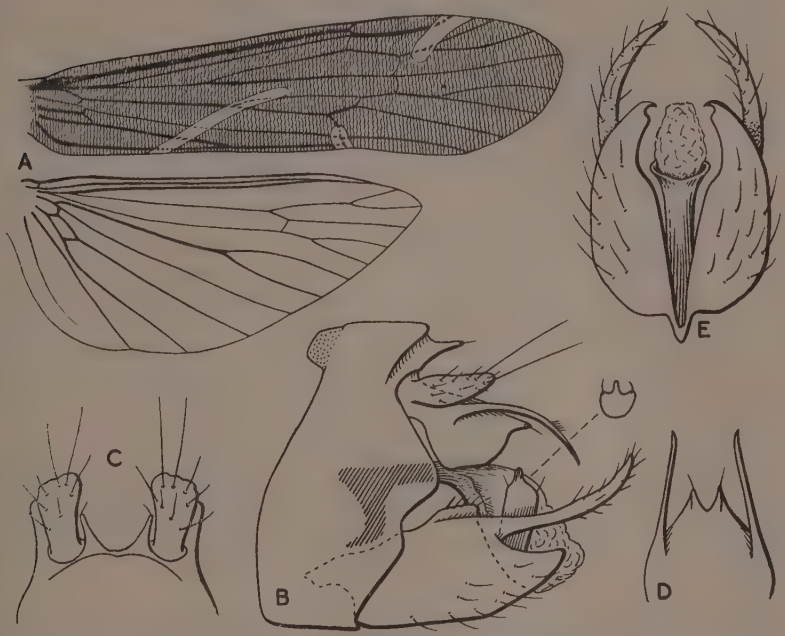

Fig. 5.—*Athripsodes hickini* sp. n. ♂. A, wings ; B, genitalia, lateral ; C, ninth segment and cerci, dorsal ; D, tenth segment, dorsal ; E, claspers and aedeagus, ventral.

view. On the upper, inner surface of the clasper, towards its apex, is a small, upstanding process, articulated at its base, its apex hooked inwards. The upper margin of the clasper in its basal half elevated in a setose ridge.

Female : Resembling male in general appearance but smaller, antennae shorter. Venation of fore wing with the usual extra apical fork no. 3.

Length of fore wing, ♂, 9 mm., ♀, 7·5 mm.

♂ Holotype, (12.v.), in form of microscope preparations, ♀ allotype, (18.v.), pinned, in Brit. Mus. (Nat. Hist.), paratypes in Hickin Coll. and in Brit. Mus. (Nat. Hist.).

Athripsodes malia (Mosely), which this new species greatly resembles, was originally placed in the genus *Homilia*. Mosely records that he had before him at the time of description examples of both sexes, but he apparently did not

notice that in the female fore wing, apical forks nos, 1, 3 and 5 are present, as in *Athripsodes*. Such an oversight on his part is to me quite inexplicable, as he normally placed great reliance on wing venation as a generic character. One of the main characters upon which *Homilia* was separated from *Athripsodes* (*Leptocerus* auct.) was the fact that in the fore wing of both sexes only forks nos. 1 and 5 were present, whereas in the female of *Athripsodes* one finds also apical fork no. 3. The number of spurs on the anterior tibia is not a reliable character, as I have seen examples of the type-species, *Homilia leucophaea*, with two spurs instead of one. McLachlan's third character, the greater complexity of the male genitalia, is merely a relative one, and one which becomes increasingly doubtful, when one considers the exotic species of *Athripsodes*. I have failed to find any satisfactory venational character whereby males of *Homilia* (and also *Leptecho* Barnard) may be separated from males of *Athripsodes*, and it may be necessary at some future date to amalgamate these three genera. For the present I propose to restrict the genus *Homilia* to those species with fore wing venation alike in both sexes (forks nos. 1 and 5) and with spur formula 1.2.2 or 2.2.2. I do not intend, however, to transfer any species known only from the male sex until the discovery of the female shows it to be wrongly placed. *Homilia malia* Mosely (which has apical fork no. 3 in the female fore wing) must, therefore, be transferred to the genus *Athripsodes*. It may be mentioned here that the male and female paratypes of *Homilia lomia* Mosely from Sierra Leone are neither conspecific nor congeneric with the male holotype and paratype from the Transvaal. The Sierra Leone females have the additional fork in the fore wing and are being described as a new species of *Athripsodes* in this paper. In the absence of an authentic female of *lomia* Mosely, this species should remain in *Homilia*.

Athripsodes hickini differs from *malia* (Mosely) in the more pointed processes of the ninth tergite; the more pronounced and excised apical margin of the tenth segment (upper penis-cover) and particularly in the form of the clasper, which is stouter in side view, the upper branch being more incurved and the "middle branch" being represented by the upwardly directed, articulated process.

Athripsodes moselyi sp. n. (Fig. 6.)

Homilia lomia Mosely, 1936 (*partim*), *Ann. Mag. nat. Hist.* (10) **17**: 432, fig. 9 (♂ ♀ Sierra Leone).

Sierra Leone: Njala, ii–iv.1932, 1 ♂, 5 ♀ (*E. Hargreaves*).

Male (pinned): Head pale fuscous, with white hairs. Antenna pale fuscous with white annulations, becoming progressively narrower apically. Palpi fuscous, with short, white hairs. Thorax pale fuscous with sparse whitish hairs. Legs fuscous, tarsi annulated with white and with at least the anterior femur clothed above with white hairs. Spurs 2.2.2. Fore wing with dark ochraceous pubescence, liberally sprinkled with small dots of whitish pubescence. Membrane apparently with hyaline patches basad and beyond the darker pterostigma. Venation scarcely differing from that of *Homilia lomia*. Abdomen ochraceous.

Male genitalia: Ninth segment from the side with its upper part obliquely cut back, apical margin from above somewhat sinuous. Tenth segment formed of two stout spines, joined at their bases, but without lateral appendages. Cerci slender, a little shorter than

the tenth segment. Aedeagus arched downwards, stout; near its base, the lateral margins are extended upwards and outwards on each side of the spines of the tenth segment in thin, rounded lobes. Apex of aedeagus bilobed, semi-membranous. Clasper stout at its base, soon narrowing to a long, incurved blunt spine. From its inner surface arises a slender finger-like process, and there is also a short, blunt process on the upper margin at the base. From beneath, the inner margin of the clasper is expanded into a rectangular shelf, and the lower, inner margin is also produced in a short blunt lobe.

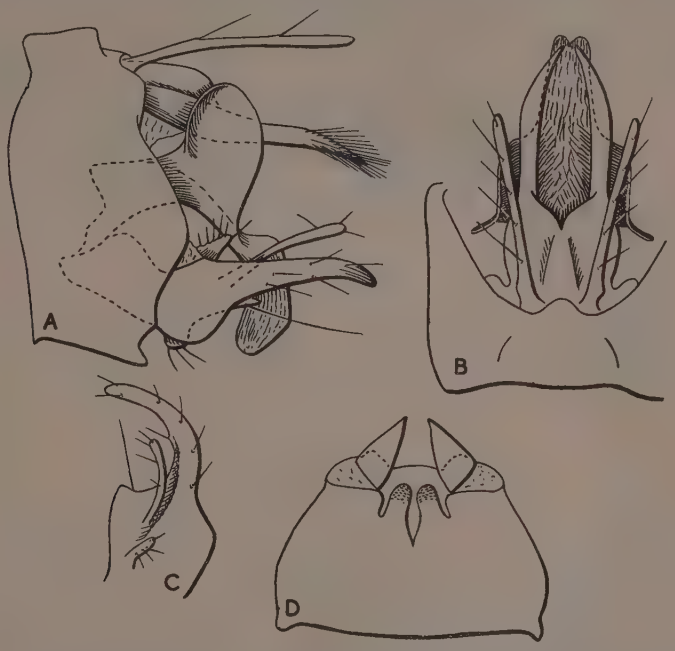

FIG. 6.—*Athripsodes moselyi* sp. n. A, ♂ genitalia, lateral; B, ninth, tenth segments and aedeagus, dorsal; C, left clasper, dorsal; D, ♀ genitalia, ventral.

Female (pinned): Resembling the male but slightly smaller and darker. Eighth sternite lightly pigmented, fuscous. Ninth sternite tapering towards its apex, apical margin from beneath straight, its centre third with a rectangular excision, which itself has a further narrow acute excision at its centre. Within the rectangular excision arises a pair of scabrous, ligulate processes, one each side of the acute excision, directed tailward and upward, extending a short distance beyond the margin of the sternite. Lateral gonapophyses triangular in ventral view. Apical margin of tenth segment feebly convex, with a short, blunt lobe on each side.

Length of fore wing ♂, 6·5 mm., ♀, 6 mm.

♂ Holotype, ♀ allotype (both with abdomens mounted as microscope preparations) and ♀ paratypes in Brit. Mus. (Nat. Hist.).

This species, which in general appearance so closely resembles *Homilia lomia* Mosely, is nevertheless an *Athripsodes*, as evidenced by the additional fork in the fore wing of the female. It is clearly related to *A. curvatus* (Ulmer) from

the Chad region, but differs in the greatly elevated lateral margins of the aedeagus and in the different form of the clasper, which in dorsal view is not smoothly curved.

It is not surprising that Mosely included these examples in his series of *Homilia lomia*. In general appearance they are extraordinarily alike, and it was not until the genitalia, which were obscured by the wings, were removed and examined that it was realised that the Sierra Leone male belonged to an entirely different species. It was solely the fact that all the females were labelled Sierra Leone and had the venation of an *Athripsodes*, that led me to compare the male with the type male from Transvaal. Confirmation that the type of *lomia* is indeed a *Homilia* must await the discovery of authentic females.

Athripsodes stigma Kimmins.

Uganda : Jinja, 5.iii, 2 ♂, 1 ♀, ix–x.1954, 3 ♂, 3 ♀ (*P. S. Corbet*).
Previously recorded from Lakes Albert, Edward and Victoria.

Athripsodes ugandanus Kimmins.

Uganda : L. Albert, Ndaiga Bay, 23.iii.1954, 2 ♂, Jinja, ix–x.1954, 13 ♂ (*P. S. Corbet*) ; Jinja, 2–28.v.1954, 11 ♂, L. Victoria, Kagera Bay, 12.v.1954, 3 ♂, 1 ♀ (*N. E. Hickin*).
Previously recorded from Uganda (Ugwemo).

Athripsodes caeruleatus sp. n. (Fig. 7.)

Nigeria : Lagos, 1896, 5 ♂ (*Sir G. Carter*), (ex McLachlan Collection).

Male (pinned) : Head piceous, the vertex completely covered with overlapping, iridescent, pale blue scales, the scaly area fringed anteriorly with white hairs. Face with piceous hairs. Basal segment of antenna also clothed above with pale blue scales, the remaining segments with white and fuscous hairs, the fuscous hairs predominating towards the apex of the antenna. Palpi piceous, with fuscous hairs ; only the apical segment of the maxillary palp flexible. Thorax piceous, with sparse piceous hairs. Legs piceous, spurs 2.2.2. Abdomen fuscous. Fore wing with five streaks or spots of iridescent pale blue scales, closely overlapping and extremely brilliant, arranged as shown in fig. 7. The ground-colour of the fore wing is mainly of dark reddish fuscous pubescence, but the posterior part of the wing (indicated by paler shading in the figure) is of orange-brown pubescence. Hind wing smoky hyaline with fuscous pubescence, apical fork no. 1 present.

Male genitalia : Ninth segment with the centre of its dorsal apical margin produced in a long, laterally compressed process, extending beyond the apices of the claspers. From above, the apex is cleft for a short distance and from the side, the dorsal process has a rounded excision of its ventral surface at the base. Cerci stout, rounded apically, more or less fused to the tenth segment, which forms a weak, semi-transparent plate, about half as long again as the cerci. Aedeagus irregularly cylindrical, semimembranous at its apex, and with a pair of downwardly curving spines arising from its ventral surface. From beneath, these spines have wide, blade-like bases, tapering to acute apices. Clasper narrow at its base, in side view abruptly dilated, its upper margin triangularly produced upwards and curving inward and basally. Apex of the clasper slender and sinuously incurved.

Length of fore wing, 6·3 mm.

♂ Holotype (mounted in canada balsam, wings mounted dry) and ♂ paratypes in Brit. Mus. (Nat. Hist.).

This handsome insect is quite unlike any other *Athripsodes* known to me. The pattern of the fore wing recalls to some extent the markings of *A. hickini* sp. n., but in that species the markings are of snow-white pubescence, whereas in the present species they are composed of overlapping blue scales. The form of the male genitalia, with its long dorsal process, is also distinctive. The presence of scales on the fore wing suggested that *caerulatus* should be placed in *Pseudoleptocerus*, but the scales are much more localised than is customary in that genus, and the venation of the hind wing is typical of *Athripsodes*.

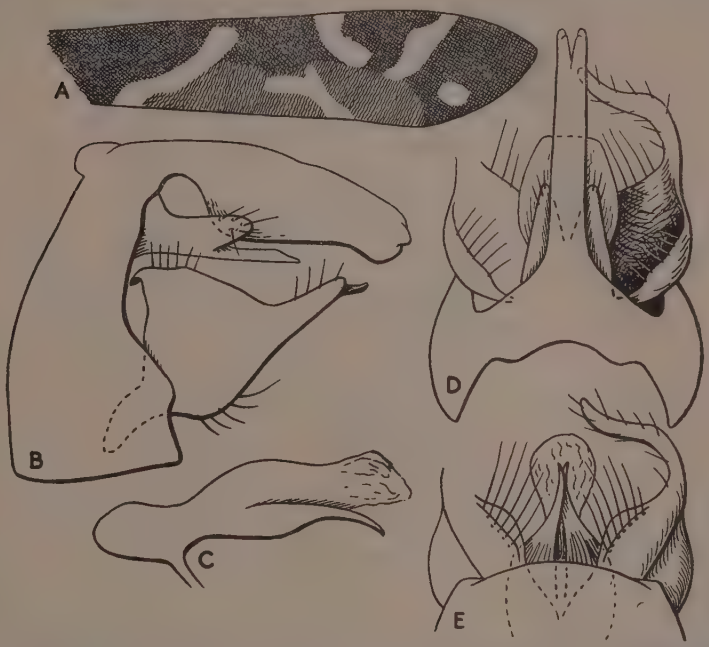

Fig. 7.—*Athripsodes caeruleatus* sp. n. ♂. A, pattern of fore wing; B, genitalia, lateral, aedeagus not shown; C, aedeagus, lateral; D, ninth and tenth segments and claspers, dorsal; E, ninth segment, clasper and aedeagus, ventral.

Leptocerina ramosa pinheyi Kimmins

Uganda: Nnamagunga, bred 21.v, 1 ♀, 28.v.1954, 1 ♂ (*N. E. Hickin*). Previously recorded from Uganda (Kampala).

Leptocerina ramosa **trifida** subsp. n. (Fig. 8.)

Uganda: Nnamagunga, bred from larva, 1 ♂ (*N. E. Hickin*).

Specimen in alcohol, colours probably somewhat teneral. General colour yellowish-brown, pubescence on vertex and dorsum of thorax whitish, elsewhere fuscous. Wings

with fuscous pubescence, anal area of fore wing darker, the actual anal margin whitish. Venation as in *L. ugandana* (Ulmer).

Male genitalia : Ninth segment considerably narrowed above. Cerci short, flattened dorso-ventrally, with a short, slender, asymmetric finger projecting from the apex. Tenth segment long, narrow, divided almost to its base to form a pair of curved, truncate blades, the upper outer margin of each with a triangular tooth towards the apex. Aedeagus slender, curved downwards, semi-membranous, with an acutely toothed rod along one side. Clasper extending nearly as far as apex of tenth segment, upcurved to a clavate apex. The inner margin is raised up to form a ridge, from which arises two branches, the outer slender, curving tailward towards the apex of the clasper, the inner short, broad, with a bifid apex directed upward.

Length of fore wing, 16 mm.

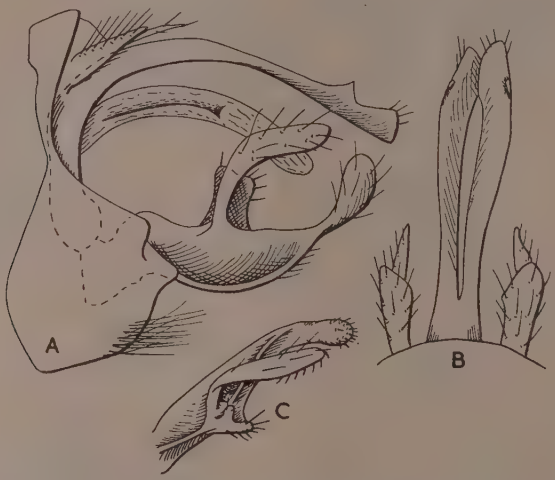

FIG. 8.—*Leptocerina ramosa trifida* ssp. n. ♂ Genitalia. A, lateral ; B, tenth segment dorsal ; C, right clasper, dorsal.

♂ Holotype (in 2 per cent. formaldehyde solution, abdomen mounted in canada balsam) in Brit. Mus. (Nat. Hist.).

This subspecies differs from the nominate subspecies and from *L. r. simulans* Mosely in the arrangement and form of the branches of the clasper, and from the latter also in the shorter, stouter cerci. From *L. r. pinheyi* it differs in the structure of the aedeagus, the truncate branches of the tenth segment and in the presence of only three branches to the clasper.

Oecetis maculata sp. n. (Fig. 9.)

UGANDA : Jinja, ix–x.1954, 2 ♂ (*P. S. Corbet.*)

Specimens collected in alcohol. General colour ochraceous, abdomen fuscous above. Head with sparse fuscous pubescence, eyes blackish, antenna finely annulated with fuscous at the joints. Palpi with fuscous pubescence. Thorax with very sparse fuscous pubescence. Legs pale ochraceous, spurs 1.2.2. Wings largely denuded in the type-series. Fore wing

elongate, apex elliptically rounded, membrane very pale fuscous, with scattered hyaline areas, particularly around the anastomosis, the base of the discoidal cell and at the arculus. There are fuscous spots at the pterostigma, bases of the discoidal and thyridial cells, at the arculus, the tips of the apical veins and a fuscous streak covering the cross-veins of the anastomosis, which form an almost straight line. Hind wing with acute apex, hyaline, veins pale ochraceous, apical fork no. 1 present.

Male genitalia : Ninth segment short, with triangular side-pieces. Cerci short, stout, tapering to rounded apices. Tenth segment lightly sclerotised, forming a narrow projecting plate. Aedeagus large, globular, with a downwardly hooked apex, and enclosing a slender, curved spine. Clasper from the side with a subtriangular hump on its upper margin about midway, apex curving upwards; from beneath, it is moderately broad at its base, narrowing to a slender curved finger at about midway.

Length of fore wing, 5·2 mm.

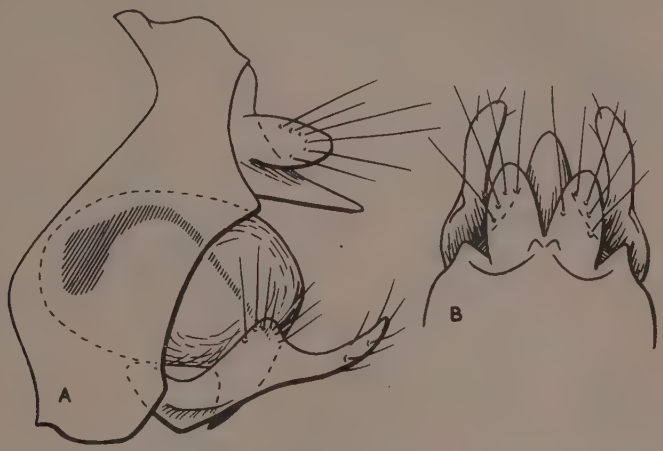

FIG. 9.—*Oecetis maculata* sp. n. ♂ Genitalia. A, lateral; B, dorsal.

♂ Holotype (in 2 per cent. formaldehyde solution, abdomen mounted in canada balsam) in Brit. Mus. (Nat. Hist.), 1 ♂ paratype in E.A.F.R.O. collection, Jinja.

This species is related to *O. thikanensis* Mosely from Kenya. It differs in the almost unbroken row of cross-veins at the anastomosis, the more pointed apex of the fore wing and the shorter discoidal cell. The male genitalia are similar in pattern but the apex of the tenth segment is more pointed and the clasper is much less produced beyond the mid-dorsal hump. The globular form of the aedeagus also occurs in species of the genus *Setodellina*, from which this species may be distinguished by having the cerci not completely fused with the tenth segment.

Oecetis fuscata sp. n. (Fig. 10.)

BRITISH CAMEROONS : Kumba, 6.x.1954, 2 ♂ (*H. Oldroyd*).

Male (pinned) : Head ochraceous, with pale fuscous hairs. Antenna pale ochraceous, with creamy white pubescence. Eyes blackish. Palpi ochraceous. Thorax dark ochra-

ceous above, paler on sides and beneath. Legs ochraceous, spurs 0.2.2. Abdomen fuscous above, ochraceous beneath. Wings with membrane fuscous, hind pair paler, venation fuscous. Pubescence of fore wing fuscous, with some rather indefinite ochraceous patches, more particularly about the anastomosis. In the fore wing, the discoidal cell is broad, nearly as long as the thyridial, the anastomosis is straight and the fifth apical cellule is sessile.

Male genitalia : Ninth segment cut back dorsally to a narrow, transverse band. Tenth segment trifid, the centre portion consisting of a finger-like process, directed upward and tailward, slightly clavate. On either side of it is a slender, transparent spine, about twice as long as the centre process, directed tailward. Cerci short, finger-like, directed upward, about half as long as the centre process of the tenth segment. Aedeagus stout, down-curved, terminating in a hook. From above, the centre part forms a trough with asymmetric sides, and to its upper surface is flexibly attached a spirally twisted spine. Clasper bifid

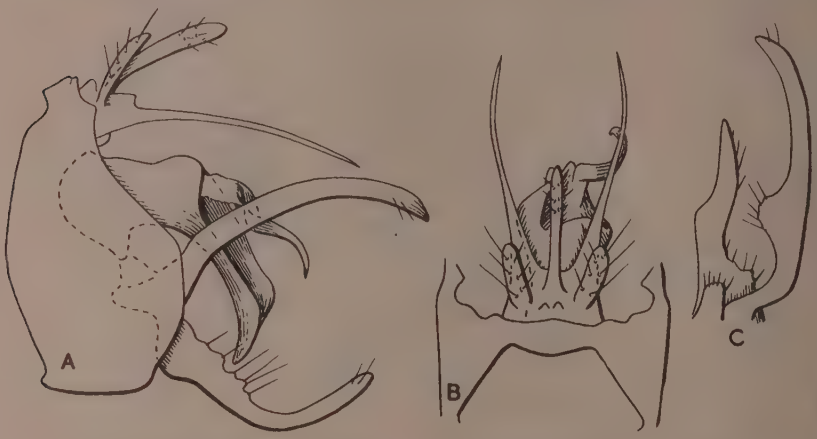

FIG. 10.—*Oecetis fuscata* sp. n. ♂ Genitalia. A, lateral ; B, ninth and tenth segments, aedeagus, dorsal ; C, left clasper, dorsal.

to its base, the upper branch being an upwardly, caudally and inwardly curved, stout spine, with a rounded swelling on its inner surface at about one-third from the base. At the extreme base of the upper branch is a small quadrate lobe, armed apically with setae. The lower branch, from the side, is slender and upcurved. From beneath, the clasper is moderately wide at its base ; the inner margin is straight for about half its length and then curves outward and tailward. The outer margin is convex and serrate, curving inward to about midway and thence running more or less parallel to the inner margin.

Length of fore wing, 8·5 mm.

♂ Holotype (with one pair of wings denuded and with abdomen mounted in canada balsam) and 1 ♂ paratype, both in Brit. Mus. (Nat. Hist.).

In the structure of the male genitalia this species differs considerably from any African species of *Oecetis* known to me. The claspers appear to be an extreme development of the pattern occurring in *Oecetis afra*, the upper fork being much longer and narrower. The tenth segment, however, differs in being trifid, the lateral branches being much longer and thinner.

Oecetis sp.

UGANDA: Jinja, 5.v.1954, 2 ♀ (*N. E. Hickin*).

Setodellina Lestage.

Lestage, 1919, *Rev. Zool. Afr.* **6**: 209.
Martynov, 1936, *Rec. Indian Mus.* **38**: 271.

Type species (monobasic) *Setodellina albopunctata* Lestage, 1919.

In my interpretation of the genus *Setodellina* Lestage, I have followed the amended diagnosis given by Martynov, in which greater emphasis is laid on the structure of the genitalia than on the wing-venation. In this genus may be included the following described African species, *Setodellina albopunctata* Lestage, *S. brunnescens* Ulmer, *S. gradata* (Ulmer), *S. maculipennis* (Ulmer), *S. rama* (Mosely) and *S. lucipetens* (Barnard). The latter two species are new combinations, having been described in the genus *Oecetis* and are here transferred to *Setodellina* on the structure of the male genitalia.

Setodellina maculipennis (Ulmer).

UGANDA: L. Victoria, Kagera Bay, 12.v, 3 ♂, 2 ♀, 15.v, 2 ♀, 18.v.1954, 1 ♀ (*N. E. Hickin*).

Previously recorded from SUDAN.

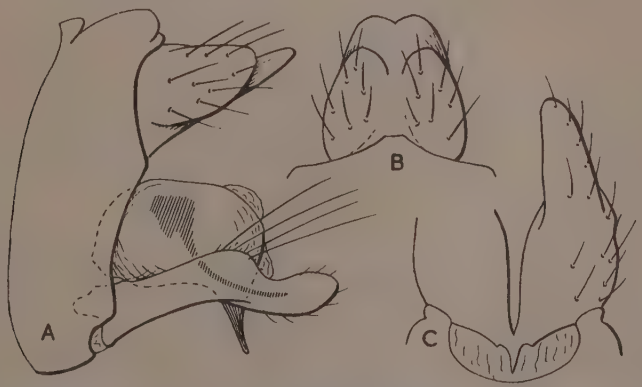

FIG. 11.—*Setodellina striata* sp. n. ♂ Genitalia. A, lateral; B, tenth segment, dorsal; C, ninth segment and clasper, ventral.

Setodellina striata sp. n. (Fig. 11.)

UGANDA: Jinja, 3, 5, v, 1.vi.1954, 1 ♂, 1 ♀, 1 ? (*N. E. Hickin*); ix–x.1954, 1 ♂, 1 ♀ (*P. S. Corbet*); L. Victoria, Kagera Bay, 12.v.1954, 1 ♂ (*N. E. Hickin*).

Male (pinned): Head light fuscous, with luteous and fuscous hairs. Antenna fulvous, with faint fuscous annulations. Palpi with fuscous hairs. Pro- and mesothorax fuscous, with fulvous hairs, metathorax and abdomen luteus. Legs luteous, spurs 1.2.2, anterior tibiae and tarsi shaded with fuscous. Pubescence of the fore wing fulvous and whitish. There is a conspicuous stria of dark fuscous pubescence in the centre of the wing between

Rs and M, extending from a little beyond the base of the thyridial cell to about the basal fourth of the discoidal cell. There are also small patches of fuscous pubescence at the base of the thyridial cell, apex of Sc, along the anastomosis and around the apical margin of the wing. Hind wing smoky hyaline, with sparse fuscous pubescence. In the fore wing, apical fork no. 1 with a short footstalk, hind wing with fork no. 1 present but small.

Male genitalia : Ninth segment with its dorsal margin somewhat produced at its centre. Tenth segment about as broad as long, formed of two fused ovate plates (cerci), with a thinner, produced portion beyond, whose apex is excised. Aedeagus globular at its base, open on its dorsal surface, its lower apical angle produced downward in a thin spatulate lobe. Within the globular part of the aedeagus can be seen membrane and a short spine. Clasper, from the side, moderately narrow, curved downward and then tailward to a rounded apex. From beneath it is wide at the base, narrowing beyond midway to a digitate apex. The inner margin, from the base to midway, carries a row of stout, socketed teeth on its upper surface.

Length of fore wing, ♂, 8 mm. ; ♀, 6 mm.

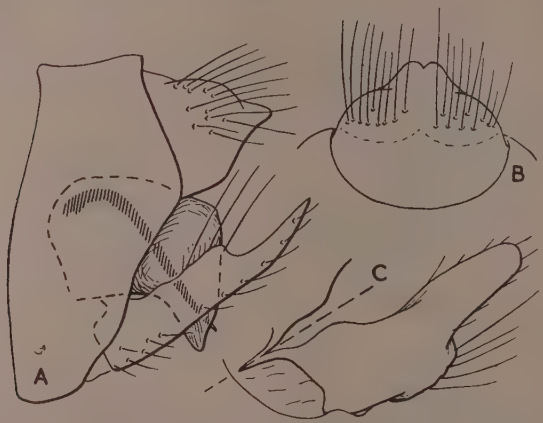

Fig. 12.—*Setodellina kagerana* sp. n. ♂ Genitalia. A, lateral ; B, tenth segment, dorsal ; C, right clasper, ventral.

♂ Holotype (5.v, with abdomen mounted in canada balsam), ♀ allotype (3.v) in Brit. Mus. (Nat. Hist.), paratypes in Brit. Mus. (Nat. Hist.), Hickin collection and E.A.F.R.O. collection, Jinja.

The fuscous stria on the fore wing gives this species a very distinctive appearance. The male genital claspers also differ from the others in the genus in their more uniform width in side view, and the apex of the aedeagus is more produced.

Setodellina kagerana sp. n. (Fig. 12.)

Uganda : L. Victoria, Kagera Bay, 12.v.1954, 8 ♂ (*N. E. Hickin*).

Specimens a little teneral, wings slightly damped and rubbed. General colour brownish. Head with fulvous and fuscous hairs. Antenna dark fulvous, ringed with fuscous at the joints. Palpi fuscous, with fulvous hairs. Thorax and legs light fuscous, spurs 1.2.2. Abdomen fulvous or luteous.

Fore wing with fulvous pubescence, marked with patches of dark fuscous pubescence near the base of the wing, at the bases of the thyridial and discoidal cells and forks nos. 1 and 5, near the apex of Sc, over the veins of the anastomosis and at termination of the apical veins. Hind wing hyaline, with sparse fulvous pubescence. Shape of wings and venation much as in *S. rama* (Mosely), but apical fork no. 1 in the hind wing is absent.

Male genitalia : Ninth segment normal, tenth segment short, broad, convex above, with a pair of large, low, hairy warts (cerci) on its upper surface, the centre of its apical margin less sclerotised, produced in two small, rounded lobes with a small excision between them. Aedeagus somewhat globose at base, open above and containing membrane and a single spine. Apex of aedeagus produced downward. Clasper, from the side, almost straight, apical third compressed dorso-ventrally to form a thin spatulate apex. From beneath the basal two-thirds are rather broad.

Length of fore wing, 9·5 mm.

♂ Holotype (mounted as a microscope preparation) in Brit. Mus. (Nat. Hist.), paratypes (pinned) in Brit. Mus. (Nat. Hist.) and Hickin Collection.

This species is closely allied to *S. rama* (Mosely) from Lake Nyasa, but differs in the absence of apical fork no. 1 in the hind wing, in having a short footstalk to fork no. 1 in the fore wing and in the form of the male clasper. In side view this is straighter than in *rama*, its lower margin not sinuous, inner apical margin straight.

Setodes excisa sp. n. (Fig. 13.)

Uganda : Jinja, 5.iii., ix–x.1954, 20 ♂, 56 ♀ (*P. S. Corbet*).

Specimens collected in alcohol : little can be said of their general appearance except that they are whitish or pale ochraceous and that the fore wings (which are largely denuded) show traces of ochraceous pubescence and small spots and streaks of rather wider blackish hairs. Eyes black, head ochraceous, above with indications of two narrow longitudinal lines of silvery hairs. Antenna with narrow fuscous annulations at the joints. Thorax and legs light ochraceous. Wings hyaline, fore wing with the posterior margin lightly streaked with pale brownish. Neuration fairly typical of the genus, hind wing a little broader than usual.

Male genitalia : Ninth segment short and deep, the claspers attached only a little below the mid line, the margin of the segment below them forming a short acute process. From beneath this process consists of two blunt lobes separated by a wide rounded excision. The dorsal apical margin is not distinct, but appears to form a rounded lobe with a flattened apex, produced between the bases of the cerci, and bearing a small bifid process at its centre. Tenth segment fused to ninth, short and arched, apical margin rounded. At its base arise the short, subcylindrical cerci. Aedeagus long, slender, strongly and abruptly arched downward and basally at about one-third from its base. Its upper surface is grooved and filled with membrane. At its base on the upper surface arises a pair of fine curved spines. Clasper, from the side, roughly rectangular, its lower margin just before the apex with a rounded excision extending about half-way across the clasper ; the remainder of the lower margin is serrate. From beneath, the clasper is seen to be concave on its inner surface, the basal angle formed by the apical excision being produced inward in a wide lobe, rounded apically, the outer angle curving inward and serrate on its inner surface.

Female genitalia : Tenth tergite more or less fused with the ninth, forming a short, arched plate with a rounded apical margin. Upon it are two short, broad, triangular lobes (? cerci), and between them two small conical projections. Lateral gonapophyses large, deeply bifid, upper branch with apex rounded, scarcely clavate, lower triangularly clubbed

and obliquely truncate. From beneath the lateral gonapophyses are sinuous. Projecting beyond the margin of the ninth sternite is a sclerotised subgenital plate, its apical margin with a rounded, median excision, within which can be seen another thin, narrow plate with a rounded apex.

Length of fore wing, ♂, 6 mm. ; ♀, 5 mm.

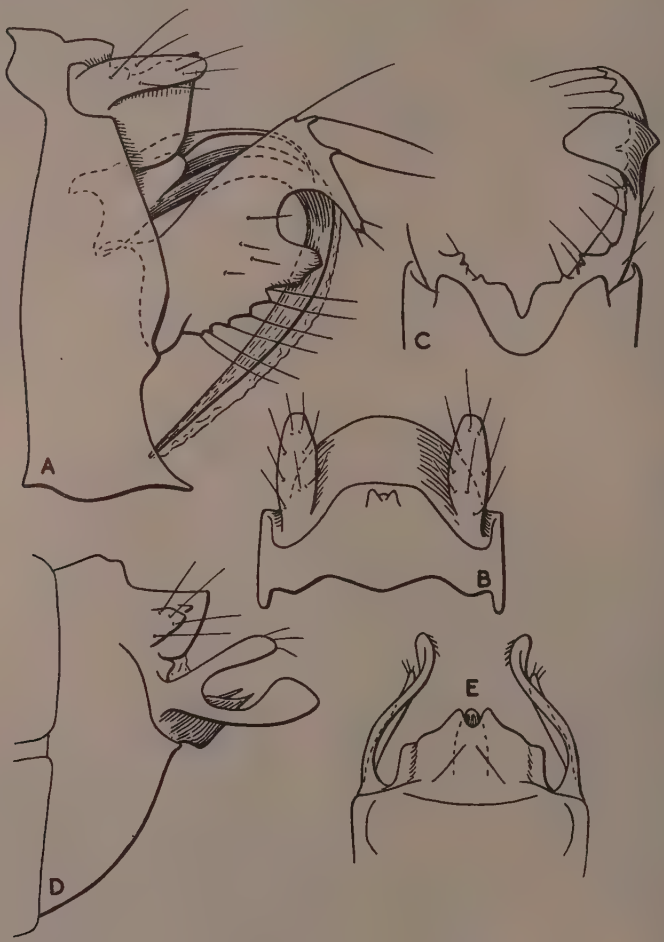

Fig. 13.—*Setodes excisa* sp. n. ♂♀ Genitalia. A, ♂, lateral; B, ♂, ninth and tenth segments, dorsal; C, ninth segment and clasper, ventral; D, ♀, lateral; E, ♀, ventral.

♂ Holotype (mounted as microscope preparations), ♀ allotype (in 2 per cent. formaldehyde solution) in Brit. Mus. (Nat. Hist.), paratypes in Brit. Mus. (Nat. Hist.), and E.A.F.R.O. collection, Jinja.

This species differs widely in genital structure from both *Setodes squamosa* Mosely and *S. gona* Mosely the other African species of the genus (in the

restricted sense). *Setodes debilis* Navás from Lake Chad is not sufficiently described or figured to be recognised with certainty. *S. excisa* may be separated from Mosely's two species by its much shorter ninth segment, the short tenth segment without spiniform processes and by the more elevated position of the claspers.

Setodes sp.

Uganda: Jinja, 5–6.v.1954, 4 ♀ (*N. E. Hickin*).

Trichosetodes semibrunnea Ulmer. (Fig. 14.)

Uganda: Jinja, 6–8, 28.v.1954, 4 ♂, 2 ♀ (*N. E. Hickin*); 5.iii, 3 ♂, ix–x, 1954, 10 ♂, 10 ♀ (*P. S. Corbet*).

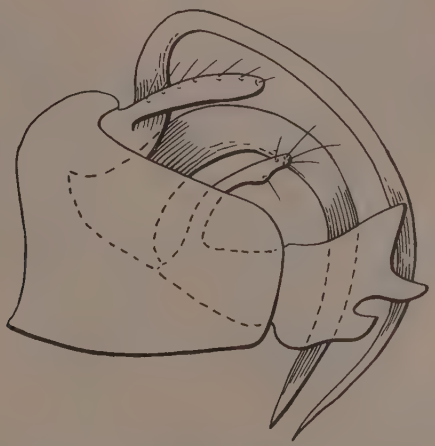

Fig. 14.—*Trichosetodes semibrunnea* Ulmer. ♂ Genitalia, lateral.

Previously recorded from Anglo-Egyptian Sudan. The Uganda examples do not entirely agree in the shape of the male clasper with Ulmer's figure, but I do not consider the difference to be more than a variation. A figure of one of the Uganda specimens is given.

Trichosetodes victoriana sp. n. (Fig. 15.)

Uganda: L. Victoria, Kagera Bay, 12.v.1954, 1 ♂ (*N. E. Hickin*); Jinja, vi.1954, 1 ♂, ix–x.1954, 7 ♂ (*P. S. Corbet*).

Head ochraceous, with three parallel, longitudinal lines of white scales above. Basal segment of antenna (with the tuft of hairs apparently denuded) ochraceous, darker on its outer surface and with a dorsal line of white scales; remaining segments clothed with white scales, apices finely annulated with fuscous. Palpi luteous. Thorax ochraceous, much abraded. Legs pale creamy white. Abdomen ochraceous. Fore wing narrow,

sub-acute, densely clothed with white and ochraceous scales, the latter forming longitudinal streaks, narrowly edged with fuscous scales, on the white ground. Hind wing with sparse pale pubescence.

Male genitalia : Similar in structure to *T. lacustris* Kimmins, but differing in details. The cerci are rounded, not truncate, apically ; the stout outer branch of the tenth segment bears an acute tooth-like projection on its outer, upper surface a little beyond midway, and the inner spiniform branch is only about as long as the outer. Apical part of the aedeagus more sinuously curved in side view. Clasper with the usual two basal branches, the main branch with a tooth near its apex. Inner apical angle less pronounced than in *T. lacustris*.

Length of fore wing, 6·5 mm.

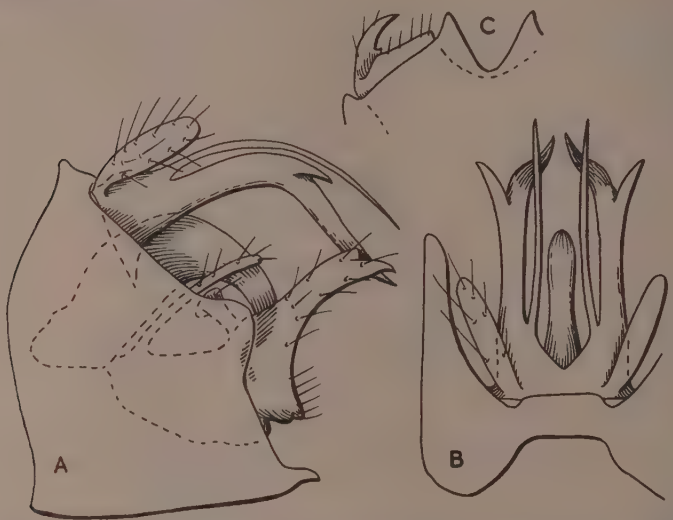

Fig. 15.—*Trichosetodes victoriana* sp. n. ♂ Genitalia. A, lateral ; B, ninth and tenth segments, aedeagus, dorsal ; C, margin of ninth segment and clasper, ventral.

♂ Holotype (12.v., pinned, with abdomen mounted in canada balsam) in Brit. Mus. (Nat. Hist.), paratypes (in fluid) in E.A.F.R.O. collection and Brit. Mus. (Nat. Hist.).

This species closely resembles *T. lacustris* (from L. Albert), differing as detailed above. It also resembles, but less closely, *T. anysa* from L. Nyasa, which differs from both the other two in having the branches of the tenth segment simple. These three species form a group distinct from *T. semibrunnea* in the structure of the claspers.

Key to African species of *Trichosetodes*, based on male genitalia.

1. Projecting part of clasper, in side view, short and broad, apex trifid. Tenth segment forming two long, slender, contiguous, down-curving spines . . . . . **T. semibrunnea** Ulmer.
– Projecting part of clasper, in side view, longer, narrow and incurved. Tenth segment forming two separated, straighter spines, each of which may be bifid 2

2. Spines of tenth segment slender, simple . . . . . **T. anysa** Mosely
   Spines of tenth segment divided into a thin inner and a stouter outer branch 3
3. Outer branch of tenth segment with a stout tooth about midway. Lower apical angle of clasper in side view scarcely produced **T. victoriana** sp. n.
   – Outer branch of tenth segment simple. Lower apical angle of clasper in side view triangularly produced . . . . . **T. lacustris** Kimmins

Hemileptocerus gregarius Ulmer. (Fig. 16.)

Hemileptocerus gregarius Ulmer, 1922, *Mitt. Münch. ent. Ges.* **12** : 56, figs. 12–16. (Sudan).
Setodes sierraleonana Ulmer, 1931, *Dtsch. ent. Zeit.* **1931** : 27, figs. 29–30. (Sierra Leone.) **(Syn. nov.)**
Hemileptocerus gregarius Kimmins, 1953, *Entomologist* **86** : 275. (Uganda.)

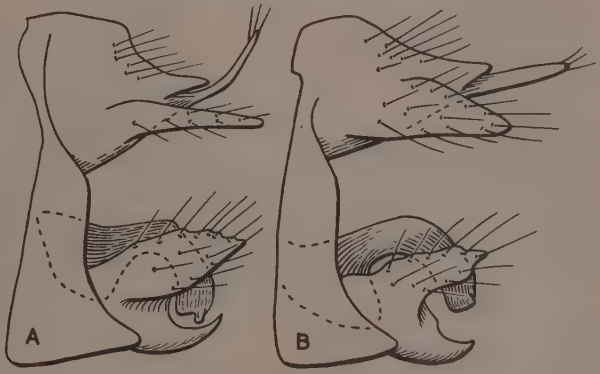

Fig. 16.—*Hemileptocerus gregarius* Ulmer. ♂ Genitalia, lateral.
A, *gregarius* paratype ; B, *sierraleonana* type.

Uganda : Jinja, 3.v–1.vi.1954, numerous examples ; L. Victoria, Kagera Bay, 12.v, a few ; Sesse Is., Serinya, 19.v, a few (*N. E. Hickin*) ; Jinja, 5.iii, ix–x.1954, numerous examples (*P. S. Corbet*).

This very pretty insect was described by Ulmer from spirit-preserved material, in which the markings of the fore wings, consisting of snow-white streaks on a fawn ground, had become denuded. Dr. Hickin's examples were in excellent condition and at first I determined them as *Setodes sierraleonana* Ulmer. Later I made some preparations and found that the wing venation agreed with that of *Hemileptocerus*. I was also impressed by the similarity of genitalia structure, a similarity which was maintained when I made a preparation of the type of *sierraleonana*. The genitalia are not absolutely identical, but the differences are small and have not proved constant in the series from Uganda. I therefore consider *sierraleonana* to be a synonym of *H. gregarius*. Dr. G. Ulmer has very kindly given me some authentic examples of *H. gregarius* for comparison and I am figuring one of these and also the type of *sierraleonana*. The apparent difference in the width of the cercus is due to variation of the plane in which it is lying.

Setodes hargreavesi Ulmer (1931, *op. cit.* : 25, figs. 25–28) I also consider to be a *Hemileptocerus*, but clearly distinct from *gregarius*. The structure of the male genitalia is very distinctive, but the hind wing is much broader than in the typical species of *Setodes* and the wing pattern is very close to that of *Hemileptocerus*.

Leptocerus intricatus (Mosely).

Uganda : Jinja, 3.v.1954, 1 ♂ (*N. E. Hickin*) ; ix–x.1954, 7 ♂ (*P. S. Corbet*).

Previously recorded from Uganda (Fort Portal) and Belgian Congo.

Fig. 17.—*Leptocerus rectus* sp. n. ♂ Genitalia. A, lateral ; B, dorsal.

Leptocerus rectus sp. n. (Fig. 17.)

Portuguese East Africa : Chirinda, Busi River, October, 1953, (*E. Pinhey*), 1 ♂, 1 ♀.

The holotype had the wings considerably denuded, but one can say that the vestiture and pattern was probably similar to that of *Leptocerus intricatus* (Mosely). The specimen has been cleared and mounted as microscope preparations and is in the British Museum (Nat. Hist.).

Male genitalia similar in structure to that of *L. intricatus* (Mosely). The median lobe of the tenth segment is broad, apex slightly produced centrally, its base being about half as wide as the greatest width of the lobe. The lateral spiniform branches of the tenth segment asymmetric, about equal in length, crossing one another, the left-hand branch the broader and with a multifurcate apex. Filiform processes of the ninth segment sinuous, about as long as the lateral branches of the tenth segment. Clasper from the side scarcely humped, the projecting upper part almost parallel-sided, with a bluntly rounded apex.

Lower part only moderately projecting, and in the excision between it and the upper part is a small setigerous projection.

Length of fore wing, 6 mm.

Resembling *L. intricatus* (Mosely), but differing in the details of the male genitalia as recorded above. The example lacking apex of abdomen probably belongs to this species, but in view of the similarity in general appearance in allied species I do not consider it as part of the type series.

Leptocerus speciosus sp. n. (Fig. 18.)

Uganda : Jinja 5.v, 2 ♂ ; L. Victoria, Kagera Bay, 12.v, 30 ♂, 31 ♀, 15.v, 9 ♂, 3 ♀ (*N. E. Hickin*).

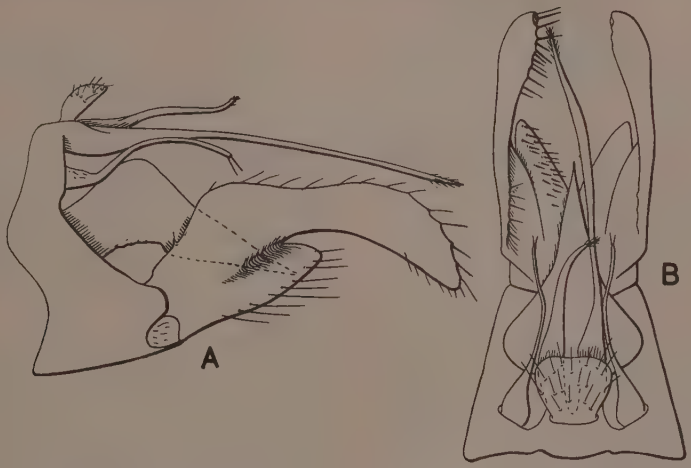

Fig. 18.—*Leptocerus speciosus* sp. n. ♂ Genitalia. A, lateral ; B, dorsal.

Head piceous, clothed with white and piceous hairs. Antennae fuscous, in basal third with segments annulated basally with white. Palpi fuscous, maxillary clothed with white hairs. Thorax shining piceous, with black hairs and sparse blueish or whitish pubescence dorsally. Legs pale fuscous or luteous. Abdomen dull greenish, shaded with fuscous.

Fore wing in fresh examples with piceous pubescence on the anterior half, two snow-white patches extending from costa to radial sector, the smaller about one-third from base, the other near the pterostigmal region. These patches are continued posteriorly as areas of pale blueish, iridescent pubescence, similar iridescent hairs being liberally mixed with piceous pubescence in posterior half of wing. Marginal fringe in apical half piceous, with about eight snow-white tufts. Hind wing with sparse fuscous pubescence. Venation showing no appreciable difference from *L. intricatus* (Mosely).

Male genitalia : Closely resembling that of *L. intricatus* (Mosely), but the central lobe of the tenth segment is subcordate and the lateral spiniform branches are asymmetric, the right-hand one being generally shorter and curved over the left. The slender, filiform processes (? cerci) are relatively shorter. The claspers in side view are less humped at

midway, then more constricted and the apex more acute and down-curved. The lower part of the clasper is more acutely produced at its apex.

Length of fore wing, ♂ 6·5 mm.

♂ Holotype, (Kagera Bay, 15.v., in form of microscope preparations) and paratypes in Brit. Mus. (Nat. Hist.), paratypes also in Hickin Collection.

In general appearance this species closely resembles both *L. intricatus* (Mosely) and *L. neavei* (Mosely). The pubescence of the fore wing is blacker, but this may well change in time to a dark chocolate-brown. The white markings are similar, and, although Mosely does not specifically mention the fact, both of his species also show the pale iridescent pubescence or scales on the posterior half of the fore wing. This clothing is easily abraded and the majority of specimens of these species in our collection are more or less denuded. The differences in male genitalia between this species and *intricatus* (Mosely) are detailed in the description.

4. List of the Leptocerinae Recorded from the African Mainland, Excluding the Mediterranean Region.

Pseudoleptocerus Ulmer, 1907.

chirindensis sp. n.
congolensis Mosely, 1939.
cupreus Barnard, 1934.
var. *subfuscus* Barnard, 1934.
njalaensis Mosely, 1933.
schoutedeni Navás, 1930.
squamosus (Ulmer, 1905) (as *Leptocerus*).

Triaenodes McLachlan, 1865 (= *Triaenodella* Mosely, 1932).

africana Ulmer, 1907.
chelifera (Mosely, 1932) (as *Triaenodella*)
clavata (Mosely, 1932) (as *Triaenodella*)
difformis Mosely, 1932.
elegantula Ulmer, 1908.
falculata sp. n.
hastata Ulmer, 1908.
kimila Mosely, 1939.
legona Mosely, 1939.
palpalis Banks, 1920.
serrata Ulmer, 1912.
wambana Mosely, 1939.

Parasetodes McLachlan, 1880.

maguira (Mosely, 1948) (as *Leptocerus*).
nebulosa sp. n.
sudanensis Ulmer, 1922.

Athripsodes Billberg, 1820 (= *Leptocerus* auct., nec Leach, 1815, = *Leptocerodes* Lestage, 1936).

amplexus (Barnard, 1834).
asanus (Mosely, 1939).
batia (Mosely, 1939).
bibulus (Barnard, 1940).
bomana (Mosely, 1939).
caeruleatus sp. n.
calcaratus (Barnard, 1941)
caricaria (Barnard, 1934).
cedri (Barnard, 1934).
corrivalus (Barnard, 1934).
curvatus (Ulmer, 1912).
dieseli (Barnard, 1940).
elaphus (Barnard, 1934).
elephas (Barnard, 1940) (as *Homilia*).
fissus (Ulmer, 1912) = *ituriensis* (Navás, 1930).
harrisoni (Barnard, 1934).
hickini sp. n.
longistylis (Barnard, 1934)

malia (Mosely, 1934) (as *Homilia*).
mandana (Mosely, 1939).
minimus, **nom. nov.** for *minor* (Mosely, 1933, nec 1930) (as *Pseudoleptocerus*).
moselyi sp. n.
namaquanus (Barnard, 1934).
oryx (Barnard, 1934).
potes (Barnard, 1934).
promontorii (Barnard, 1934).
pulcher (Ulmer, 1912).
quathlambae (Barnard, 1941).
quartus (Marlier, 1943).
schoenobates (Barnard, 1934).
schoutedeni (Mosely, 1939).
scramasax (Barnard, 1934).
securis (Barnard, 1934).
spatula (Barnard, 1940).
spinosissimus (Ulmer, 1922).
spinosus (Navás, 1930).
stephanus (Barnard, 1934).
stigma Kimmins, 1953.
sylvaticus (Barnard, 1934).
tabularis (Barnard, 1934).
trivittatus (Ulmer, 1905).
tuckeri (Barnard, 1934).
ugandanus Kimmins, 1953.

Leptecho Barnard, 1934.

lupi Barnard, 1934.
scirpi Barnard, 1934.

Leptocerina Mosely, 1932.

connexa (Navás, 1930) (as *Leptocerus*).
mlanjensis Mosely, 1932.
niveicornis (Ulmer, 1906) (as *Leptocerus*).
ramosa (Ulmer, 1912) (as *Leptocerus*).
r. pinheyi Kimmins, 1955.
r. simulans Mosely, 1932.
r. trifida ssp. n.
spinigera Mosely, 1912.
talopa Mosely, 1939.
ugandana (Ulmer, 1931) (as *Leptocerus*).

Oecetis McLachlan, 1877 (= *Potamoryza* Barnard, 1934).

acuta, Ulmer, 1931.
afra, Mosely, 1934.
aganda Mosely, 1936 (**n. n.** for *punctata* Mosely, 1932).
angustipennis Mosely, 1939.
anomala Marlier, 1943.
appendiculata Ulmer, 1923.
bicaudata Navás, 1931.
caudata Navás, 1936.
choa Mosely, 1948.
fasciata Lestage, 1919.
fuscata sp. n.
hulstaerti Navás, 1931.
janseni Navás, 1931.
kathia Mosely, 1939.
kunenensis Barnard, 1934.
maculata sp. n.
modesta (Barnard, 1934) (as *Potamoryza*).
montana Ulmer, 1930.
ovampoensis Barnard, 1934.
pangana Navás, 1930.
portalensis Mosely, 1939.
setifera Ulmer, 1922.
thikanensis Mosely, 1939.
virgata Ulmer, 1908.

Setodellina Lestage, 1919.

albopunctata Lestage, 1919.
brunnescens Ulmer, 1923.
gradata (Ulmer, 1923) (as *Oecetis*)
kagerana sp. n.
lucipetens (Barnard, 1940) (as *Oecetis*).
maculipennis (Ulmer, 1922) (as *Oecetis*).
striata sp. n.
rama (Mosely, 1948) (as *Oecetis*).

Ptoehoecetis Ulmer, 1931 (= *Haplosetina* Navás, 1931).

africana Ulmer, 1931.
tenella (Navás, 1931) (as *Haplosetina*).

Homilia McLachlan, 1877.

aurifera Navás, 1931.
knysnaensis Barnard, 1934.
lomia Mosely, 1932 (not Sierra Leone examples).
pallida Navás, 1930.
vestita Navás, 1931.
vetulata Barnard, 1934.

Setodes Rambur, 1842 (restricted).

debilis Navás, 1931.
excisa sp. n.
gona Mosely, 1939.
squamosa Mosely, 1931.

Trichosetodes Ulmer, 1915.

anysa Mosely, 1948.
lacustris Kimmins, 1953.
semibrunnea Ulmer, 1923.
victoriana sp. n.

Hemileptocerus Ulmer, 1922.

gregarius Ulmer, 1922 (= *Setodes sierraleonana* Ulmer, 1931).
hargreavesi (Ulmer, 1931) (as *Setodes*).

Leptocerus Leach, 1815.

didymata (Barnard, 1934) (as *Setodes*).
gracilis (Ulmer, 1912) (as *Setodes*).
intricata (Mosely, 1939) (as *Setodes*).
neavei (Mosely, 1932) (as *Setodes*).
rectus sp. n.
speciosus sp. n.

Adicella McLachlan, 1877.

darfurica (Mosely, 1936) (as *Triaenodes*).
monachus Barnard, 1940.
sicula Barnard, 1934.
triaenodiformis Ulmer, 1930.

Leptocella Banks, 1899.

sp. Gold Coast, possibly with incorrect locality labels.

5. Summary.

This paper is based mainly on material collected in Uganda by Drs. N. E. Hickin and P. S. Corbet in 1954, to which has been added descriptions of a few new species from other parts of Africa. In all, fourteen new species and one new subspecies are described, some new synonymy is proposed and a key to the genera of the Leptocerinae of the region is given.